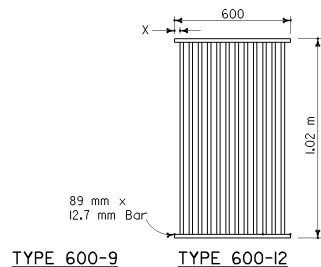
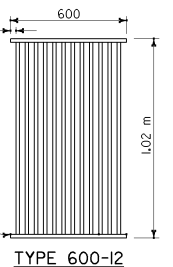


35 mm Clear spacing.  
Use within the roadbed on all types of highways where bicycles and pedestrians are excluded.



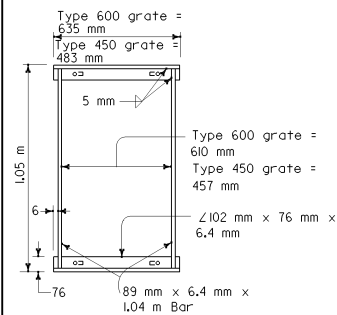
51mm Clear spacing.  
Use in locations off the roadbed on all types of highways.



35 mm Clear spacing.  
Use within the roadbed on all types of highways where bicycles and pedestrians are excluded.

### RECTANGULAR GRATE DETAILS

(See table below)



TYPICAL FRAME

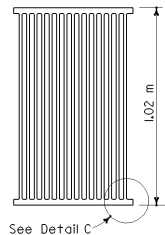
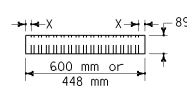
### RECTANGULAR FRAME DETAILS

(For all rectangular grates)

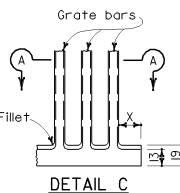
GRATE BAR SPACING TABLE

TYPE	NO. OF BARS	CLEAR BAR SPACING (mm)	X (mm)
450-9	9	35	27
600-9	9	51	40
600-12	12	35	32

INLET TYPE	COVER TYPE	MASS (kg)
OS	PLATE	79
OL-2,J	PLATE	77
OL-3,0	PLATE	77
OL-4,3	PLATE	77
OL-6,4	PLATE	77
OCF	PLATE	51
OCPI	PLATE	51
OCPI	REDWOOD	19
OMP	PLATE	80
OMPI	PLATE	80

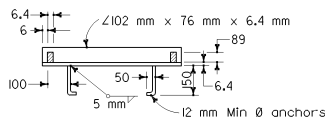


See Detail C



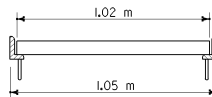
SECTION A-A

### ALTERNATIVE CAST NODULAR IRON GRATE OR CAST STEEL GRATE



CROSS SECTION

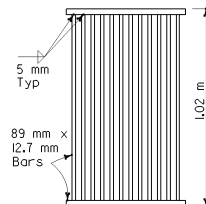
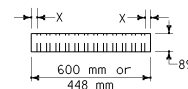
(Thru frame)



LONGITUDINAL SECTION

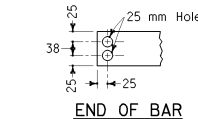
(Thru frame and grate)

INLET TYPE	GRATE TYPE	NO. OF GRATES	MASS (kg)
G00	600-12	2	288
G0L-2,J	600-12	1	148
G0L-3,0	600-12	1	148
G0,G1,G2,G3,G4(TYPE 600)	600-9	1	119
	600-12	1	148
G4(TYPE 450),G5,G6	450-9	1	113
GT-1	450-9	2	226
GT-2	450-9	2	226
GT-3	600-12	2	296
GT-4	600-12	2	296
TRASH RACK			10

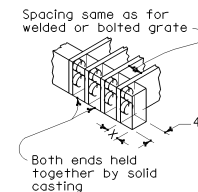


### ALTERNATIVE WELDED GRATE

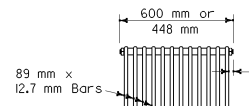
### CAST END BLOCK



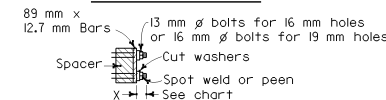
END OF BAR



### ALTERNATIVE CAST NODULAR IRON OR CAST STEEL END BLOCK GRATE



BOLTED END BLOCK



BOLTING DETAIL

### ALTERNATIVE BOLTED GRATE



DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET TOTAL NO. SHEETS

REGISTERED CIVIL ENGINEER  
Glenn DeCou  
No. C34547  
EXPI. 9-30-05  
STATE OF CALIFORNIA

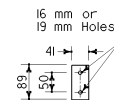
July 1, 2004  
PLANS APPROVAL DATE

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

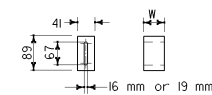
To get to the Caltrans web site, go to: <http://www.dtd.ca.gov>

### NOTES

- Grate type numbers refer to approximate width of grate in millimeters and number of bars, respectively.
- Contractor has the option of using cast nodular iron, cast steel, welded, bolted, or cast end block grate.
- See Special Provisions for requirements pertaining to galvanizing or asphalt dipping of grates and frames.
- Rounded top of bars optional on all grates.
- Pipe inlets with a grate shall be placed so that bars parallel direction of principle surface flow.
- Full penetration butt welds may be substituted for the fillet welds on all anchors.
- Standard square, hexagon, round or equivalent headed anchors may be substituted for the right angle hooks on the anchors shown on this plan.
- Grate and frame weights are based on welded grates (weights of face angles, steps, protection bars, etc. are not included).



BAR SPACER



ALTERNATIVE SPACER

35 mm or 50 mm

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

### GRATE DETAILS

NO SCALE

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

D77A